

YOGA CHIKITSA & RESPIRATORY DISORDERS

Yogacharya

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**Director Institute of Salutogenesis and
Complementary Medicine (ISCM) of Sri
Balaji Vidyapeeth, Puducherry**

Salutogenesis, our Focus

- Moving from *pathogenesis*, the focus on disease towards *salutogenesis*, the focus on health!

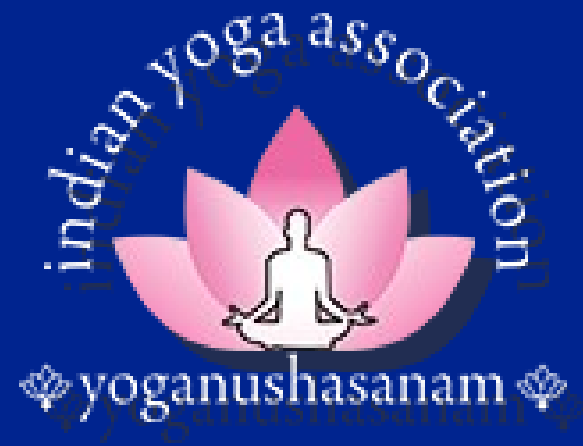


Salutogenesis



- ISCM BV is striding *forward* on an innovative path of promoting holistic health for one and all.

**We are so
pleased to
share and
learn with
all of you in
the
Karnataka
Chapter of
IYA**



Indian Yoga Association - Karnataka

Indian Yoga Association
yoganushasanam

RV
INSTITUTIONS

1st Yoga Therapy Research Conference

OUR SPEAKERS

			
Dr Ananda Balayogi Bhavanani, Yogic Management of Respiratory Health	Dr. Sharadchandra Bhalekar, Yogic Treatment of Back Pain	Dr. Latha Satish, Yogic Approach to Anxiety and Depression	Dr Amit Singh, Yogic Management of Diabetes

31st Oct, 2023 09am - 06:00pm RVIM, Jayanagar

Bridging the experiential wisdom of Yoga with empirical modern medical science.

Yoga is usually found in Physical Edu & Sports deptts of universities
We at **ISCM**, have it in a medical institution since 2010

- quality of life enhancing benefits for ~ **93,000** patients
- educating future Yoga therapists (PGDYT, MSc, Mphil, PhD),
- creating awareness amongst medical, dental and nursing students & professionals
- scientifically researching Yoga,
- **150** publications & **12** CMEs



Salutogenesis

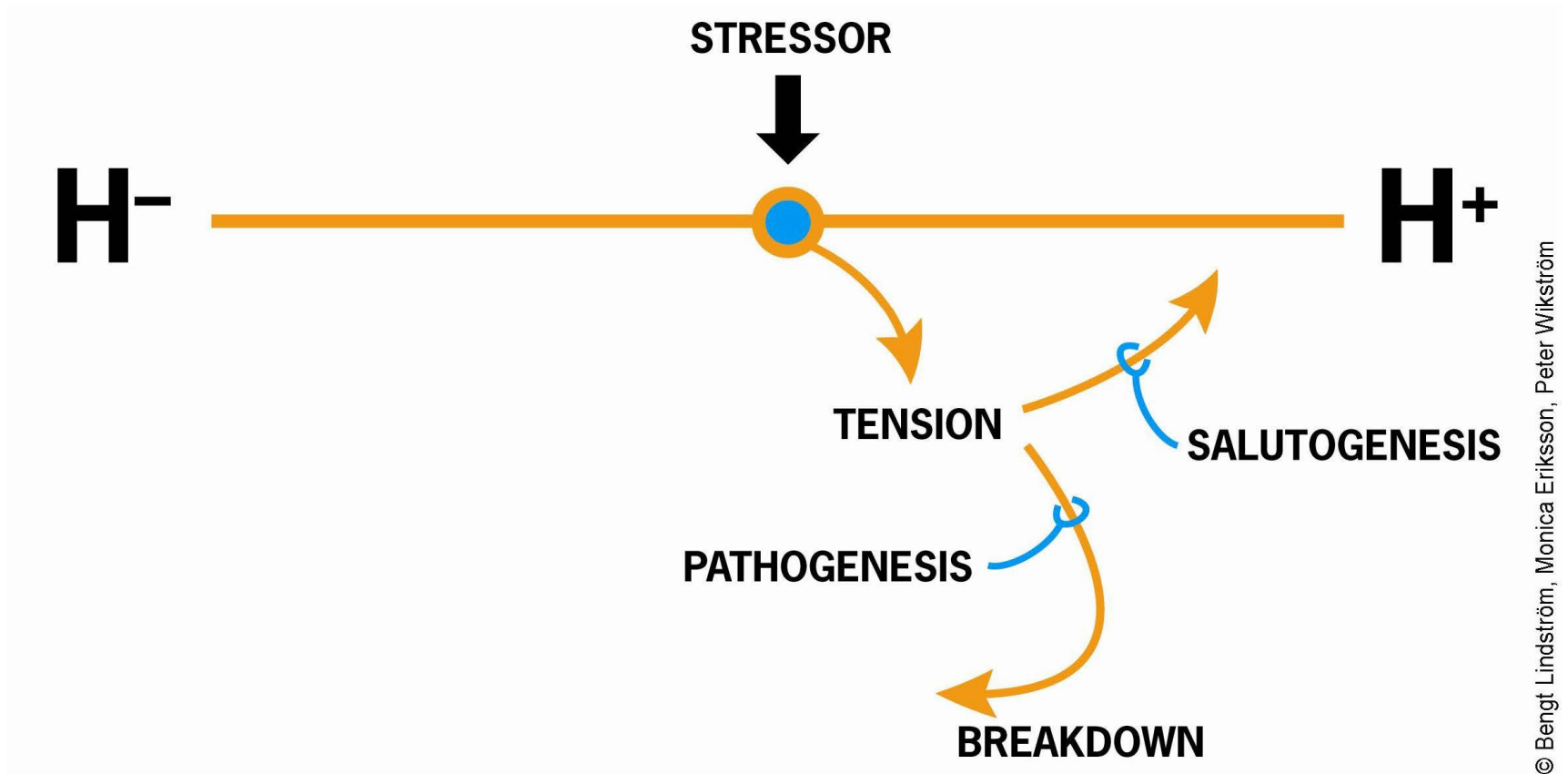
- Derivation of Greek + Latin
 - **Latin:** *salus* = **health**
 - **Greek:** *genesis* = **source**
- **In combination = Sources of health**

Changing paradigm

From: “what did I do today to treat disease / illness?”



To : “what did I do today to create health/wellness?”



© Bengt Lindström, Monica Eriksson, Peter Wikström

Figure 1. Antonovsky's own way of explaining the health continuum and the salutogenic direction

Why use salutogenesis?

We have done well, but.....

We can do better with more information!

BABY BLUES



If not bad, are you good?

If not poor, are you rich?

If not hopeless, are you hopeful?

If not dissatisfied, are you satisfied?

If not ill, do you have health/wellness?

If you don't flunk out, are you a good student?

It doesn't matter how many resources you have.



If you don't know how to use them,
it will never be enough.



Samadhi
Dhyana

Spiritual
health

Dharana
Pratyahara

Mental
health

Pranayama
Asanas

Physical
health

Niyamas -
Yamas

Social
health

Yoga places great importance on a proper and healthy lifestyle whose main components are:

- **ACHAR** – healthy physical activities & exercise
- **VICHAR** – right thoughts and right attitude towards life that are vital for wellbeing.
- **AHAR** – healthy, nourishing diet with adequate intake of fresh water; balanced intake of fresh food, green salads, sprouts, unrefined cereals & fresh fruits. *Satwic* diet, prepared & served with love & affection.
- **VIHAR** – proper recreational activities to relax body and mind are essential for good health.
- **VYAVAHAR** – healthy relationships for social health

Mechanisms of Yoga

All aspects of human psycho-physiological functioning improved

When the breath is steady, emotions become more balanced

When the body is stilled, the mind starts to calm down

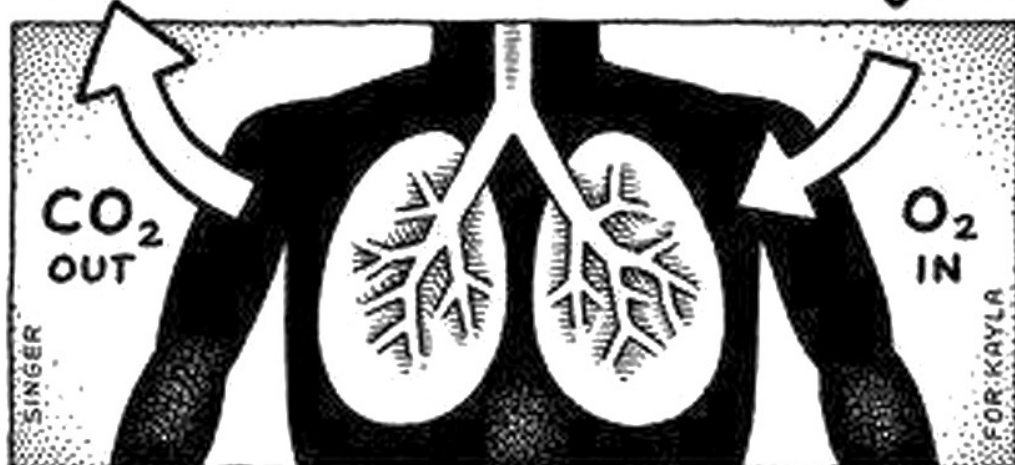
Conscious focus on the present moment-the **NOW**

Integration breath pattern with coordinated smooth body movements

NO EXIT

© Andy Singer

**FORESTS ARE THE LUNGS OF
THE WORLD**



*...AND THE PERFECT COMPLEMENT
TO HUMAN AND ANIMAL LUNGS!*

- The holistic science of Yoga is the best lifestyle ever designed and is effective in managing non-communicable lifestyle disorders (Bhavanani, 2013).
- Modern research has focused on psycho-physiological beneficial effects of Yoga which is more than a mere physical exercise (Jeter et al, 2015).
- Scientific basis of using Yoga as adjunct therapy in COPD is well established with significant improvements in lung function, quality of life indices and bronchial provocation responses coupled with decreased regular & rescue medicines (Nagarathna 1985; Vempati , 2009).
- Behera reported perceptible improvement in dyspnoea & lung function in patients of bronchitis after 4 weeks Yoga therapy with postures & breathing techniques (Behera, 1998).

Yoga Practices

Postures, Breathing,
Relaxation, Meditation

Self-

Regulation

Awareness

Spirituality

Fitness

↑ Flexibility
↑ Strength
↑ Coordination/
Balance
↑ Respiratory
Function
↑ Self-Efficacy

↑ Emotion
Regulation
↑ Stress
Regulation
↑ Resilience
↑ Equanimity
↑ Self-Efficacy

↑ Attention
↑ Mindfulness
↑ Concentration
↑ Cognition
↑ Meta-cognition

↑ Transcendence
↑ Unitive State
↑ Flow
↑ Transformation
↑ Life
Meaning/Purpose

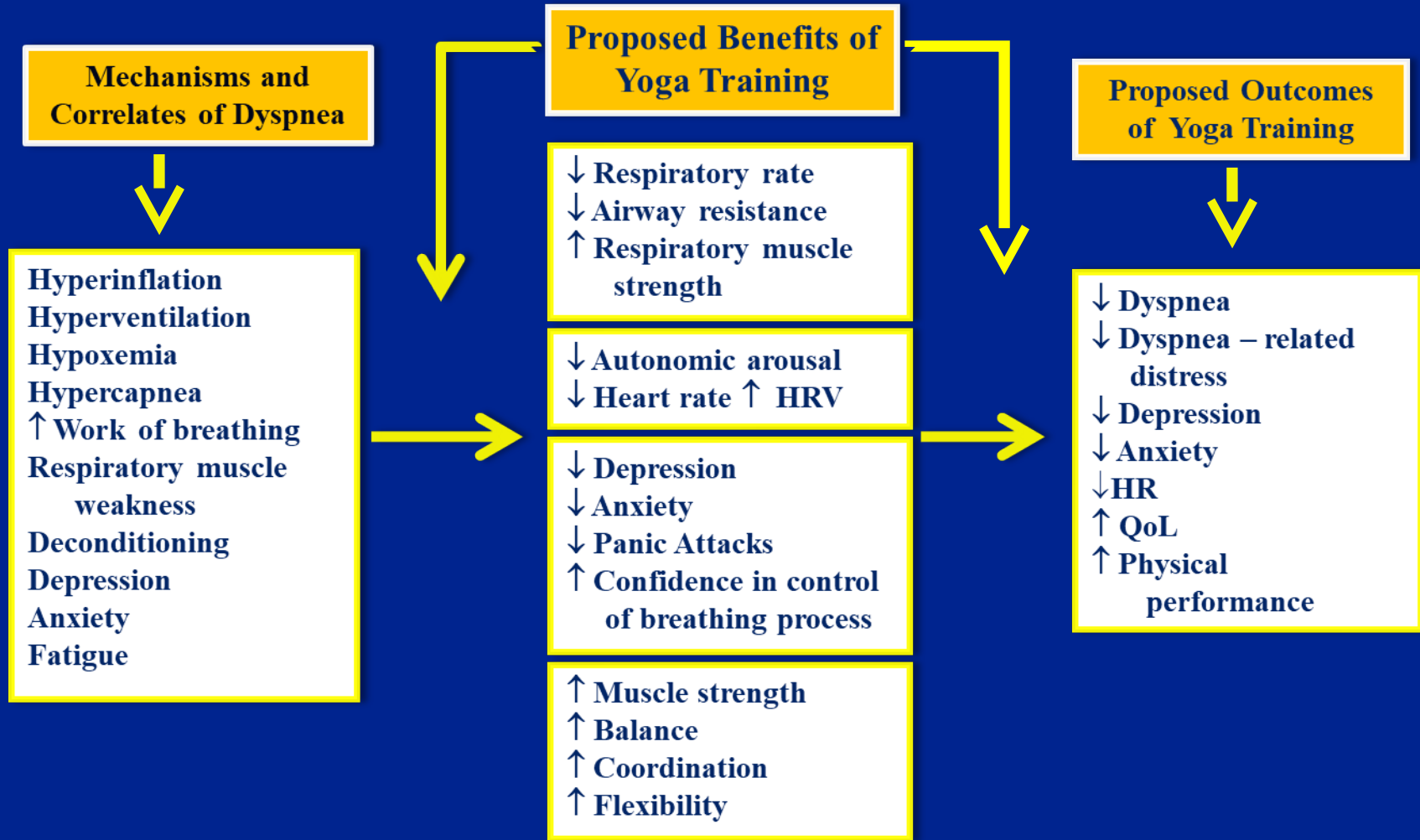
Global Human Functionality

↑ Physical & Mental Health, ↑ Physical, Mental,
Emotional Performance, ↑ Positive Behavior Change,
↑ Social Responsibility, Values, Relationships,
↑ Quality of Life, ↑ Life Purpose & Meaning,

** Concept and image source of Sat Bir S Khalsa,*

PhD USA

Proposed relationships among dyspnea, benefits of yoga, and outcomes of participation in a yoga program.



Donesky-Cuenco D, Nguyen HQ, Paul S, Carrieri-Kohlman V. Yoga Therapy Decreases Dyspnea-Related Distress and Improves Functional Performance in People with Chronic Obstructive Pulmonary Disease: A Pilot Study. J Altern Complement Med 2009; 15: 225-234.

- Yogic cleaning techniques such as dhauti kriya (upper GI cleaning with warm saline or muslin cloth) and neti kriya (warm saline nasal wash) remove excessive mucous secretions, decrease inflammation & reduce bronchial hypersensitivity thereby increasing provocation threshold while kapalabhati through forceful exhalations improves the capacity to exhale against resistance (Satyaprabha, 2001).
- A nonspecific broncho-protective or broncho-relaxing effect has been also postulated (Singh, 1987) while
- Improved exercise tolerance reported following Yoga therapy in patients of chronic severe airways obstruction (Tandon, 1978).

- It has been reported that well-performed slow yogic breathing maintains better blood oxygenation without increasing minute ventilation,
- reduces sympathetic activation during altitude-induced hypoxia (Bernardi et al, 2001) and
- decreased chemoreflex sensitivity to hypoxia and hypercapnia (Spicuzza et al, 2000).

- Asthmatic patients showed a statistically significant improvement in Transfer factor of the lung for carbon monoxide (TLCO), forced vital capacity (FVC), forced expiratory volume in 1st sec (FEV1), peak expiratory flow rate (PEFR), maximum voluntary ventilation (MVV) and slow vital capacity (SVC) after 2 months Yoga practice.
- Quality of life also increased significantly.
- It was concluded that pranayama and Yoga postures may be used to increase respiratory stamina, relax the chest muscles, expand the lungs, raise energy levels, and calm the body (Singh et al, 2012).

- A study to assess beneficial effects of Yoga in exercise-induced broncho-constriction in children aged 7-16y reported that all exercise-response-positive asthmatics became exercise response-negative asthmatics after 3 months of bi-weekly Yoga training (Tahan et al, 2014).
- It was recommended that Yoga training can supplement drug therapy to achieve better control of asthma in children.

- In a study of 120 non-smoking male and female patients of asthma (age group 17-50 yr), 8 weeks of Yoga breathing exercises adjunctively with standard pharmacological treatment significantly improved quality of life (Sodhi et al, 2014).
- A recent review (Jayawardena et al, 2020) explored therapeutic benefits of pranayama and concluded beneficial physiological & psychological effects in patients with respiratory diseases such as bronchial asthma

Deep breathing is economical *

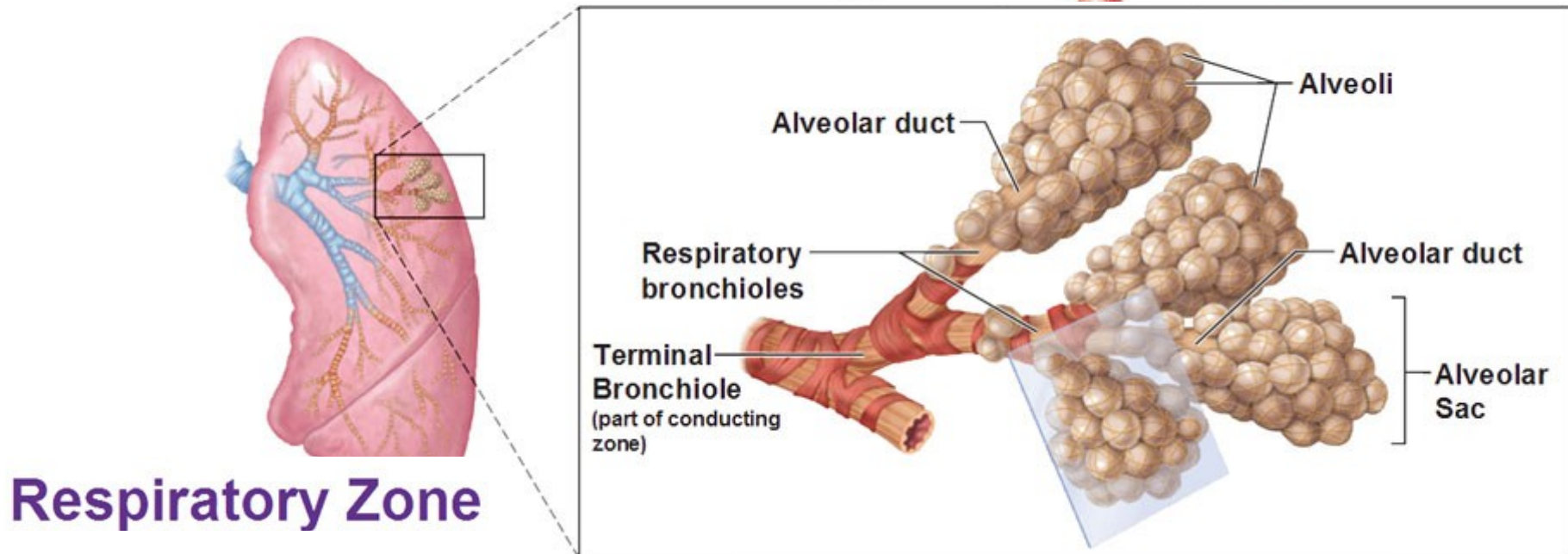
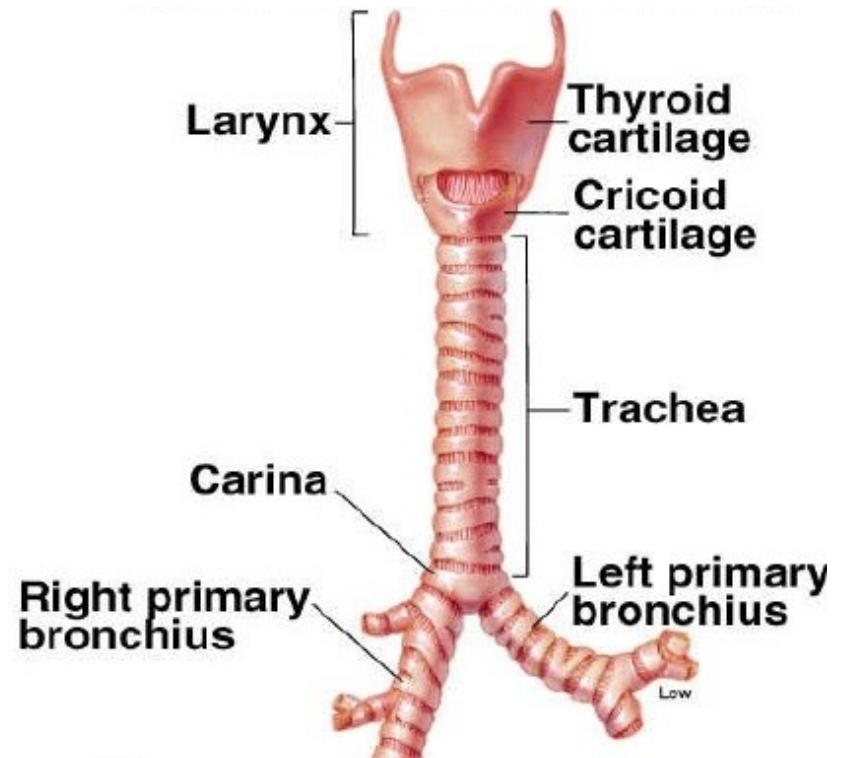
<u>Normal</u>	<u>Shallow</u>	<u>Deep</u>
Volume (ml)	500	200 1000
Rate/min	12	30 6
Ventilation (ml)	6000	6000 6000
Dead space (ml)	150	150 150
Dead space V (ml)	1800	4500 900
Alveolar V (ml)	4200	1500 5100

* Prof Madanmohan, Former Director CYTER and Head Department of Physiology, JIPMER

Conducting zone:

All the structures air passes through before reaching the respiratory zone.

Mouth, nose, pharynx, trachea, glottis, larynx, bronchi.



Respiratory Zone

Deep breathing is economical *

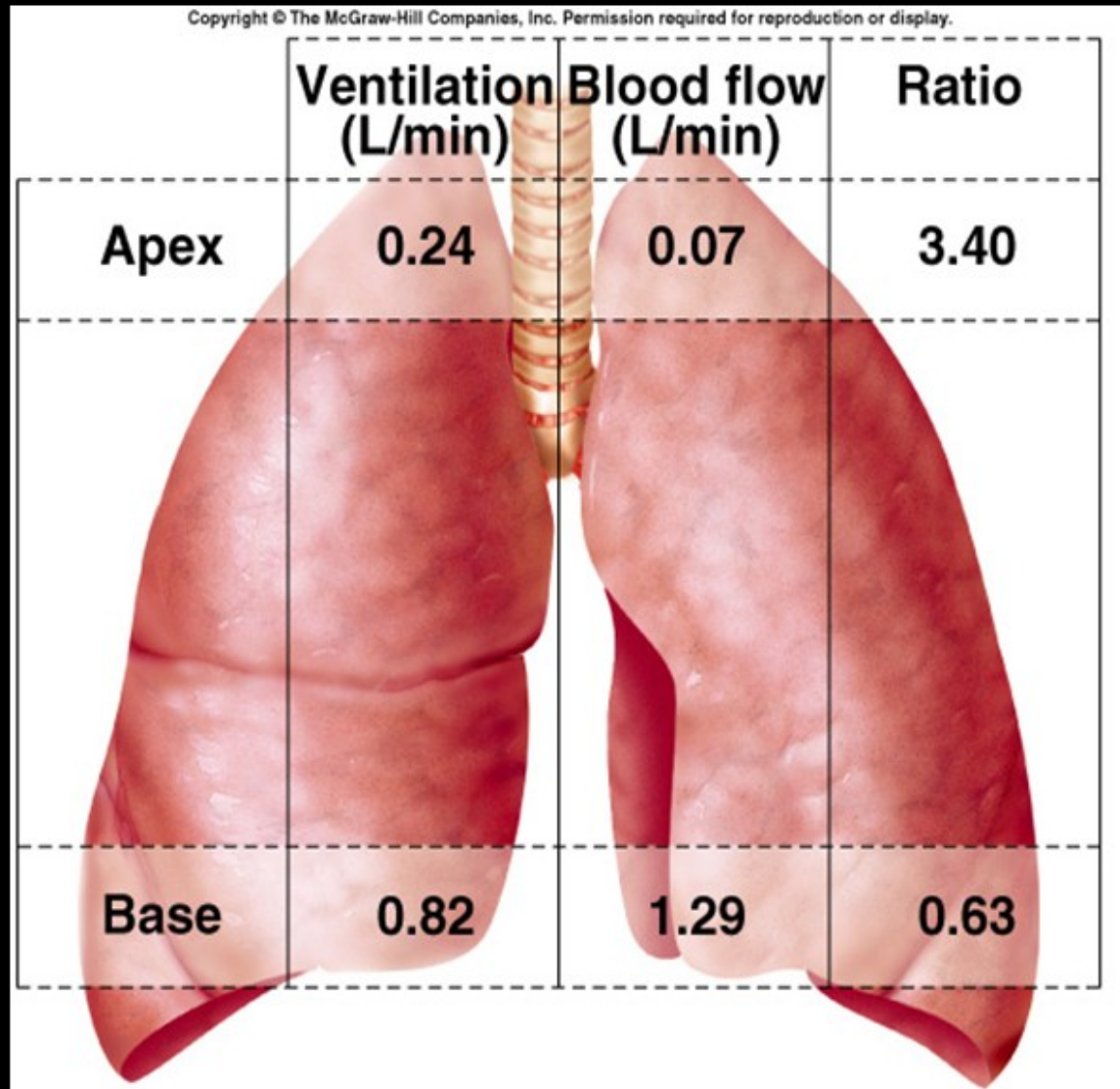
<u>Normal</u>	<u>Shallow</u>	<u>Deep</u>
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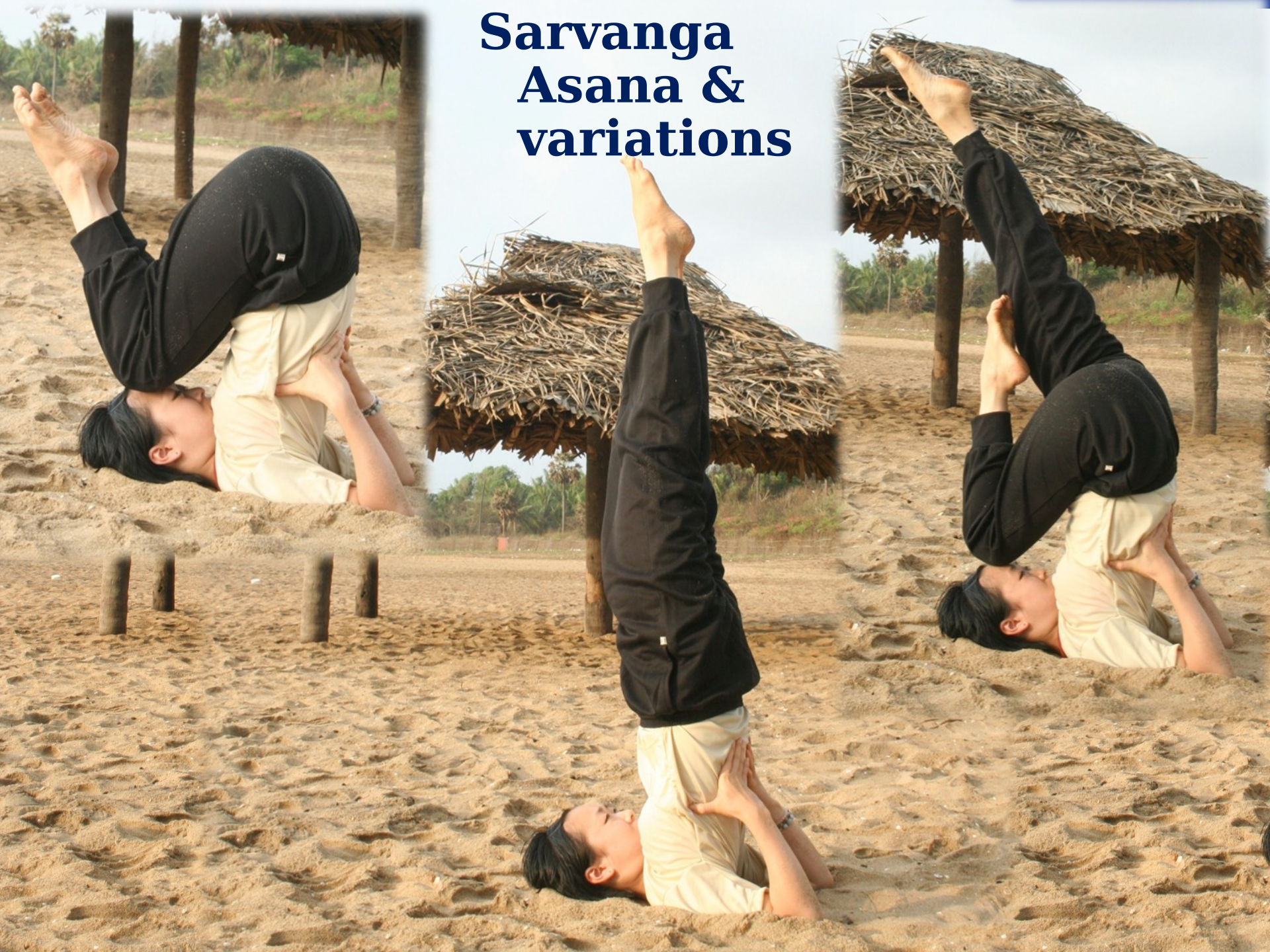
Lung Ventilation/Perfusion Ratios

- **Functionally:**

- Alveoli at apex are underperfused (overventilated).
- Alveoli at the base are underventilated (overperfused).



Sarvanga Asana & variations





Bala Asana



Meru Asana



Padhastha Asana

Chant Your Way To Healthy Sinuses

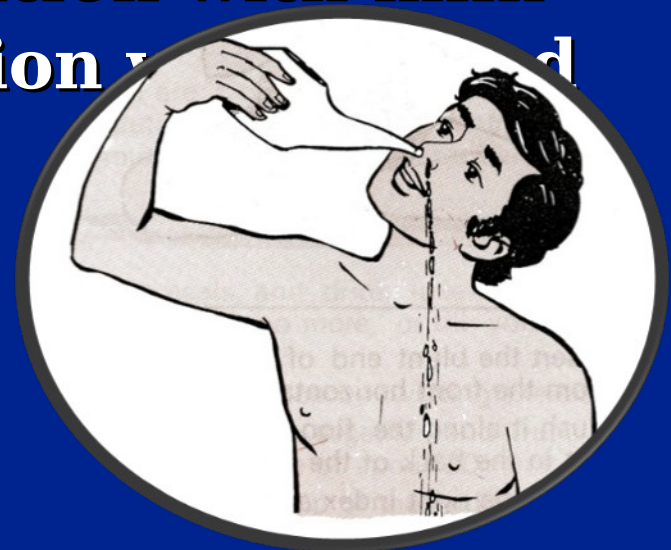
- **Chanting creates sound vibrations encouraging air to move back & forth between sinus membranes and nasal passages.**
- **This helps open the tiny ducts connecting the nose to the sinuses, allowing the sinuses to drain properly.**
- **Sinuses are effectively ventilated by humming.**
- **Previous research has shown that poor sinus ventilation increases the risk for sinusitis.**

- Daily humming or "Om" chanting may prevent infections from actually taking hold, according to Jon Lundberg and Eddie Weitzberg of the Karolinska Institute, Sweden.
- They found that humming increased nitric oxide levels **fifteen-fold**, compared to quiet exhalations without sound.
- The exhalations of people with healthy sinuses tend to have high nitric oxide levels, indicating that more air is able to flow between the sinuses and the nose.
- Nada Pranayamas of Yoga such as **Bhramari** and the **Pranava** are similar to the humming used in the study.
- Vowel sounds are useful in sleep apnea!

Neti: The Yogic Nasal Cleansing Technique

Types of Neti:

- Jala Neti -Nasal irrigation with lukewarm saline
- Sutra Neti -cleaning with a thread or catheter
- Dugdha Neti -Nasal irrigation with milk
- Ghrta Neti -Nasal irrigation with ghee
- Jala Kapalabhati
 - Vyutkrama Kapalabhati
 - Seetkrama Kapalabhati



Benefits of Neti Kriya

- **Removes mucus and dust particles from the nasal passages and the sinuses.**
- **All the five Jnanendriyas are purified, cleansed and activated by Neti Kriya**
- **Excellent preventive against cold, cough, sinusitis and infections of the respiratory tract.**
- **Neti also renders the nose resistant to irritants like water, cotton, rubber, ghee, milk and thus helps in hypersensitivity eg. Allergic Rhinitis.**
- **Helps to overcome addictions especially to tobacco and alcohol.**

Nasal irrigation

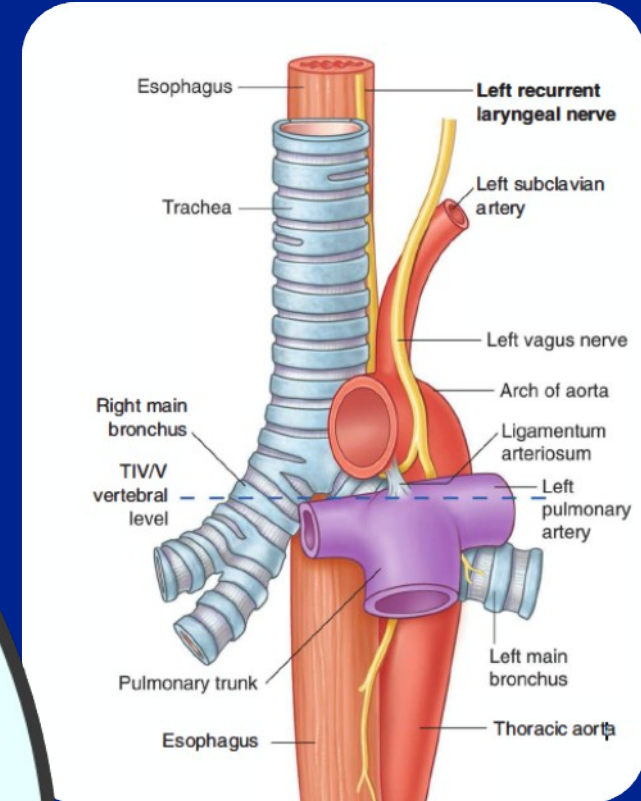
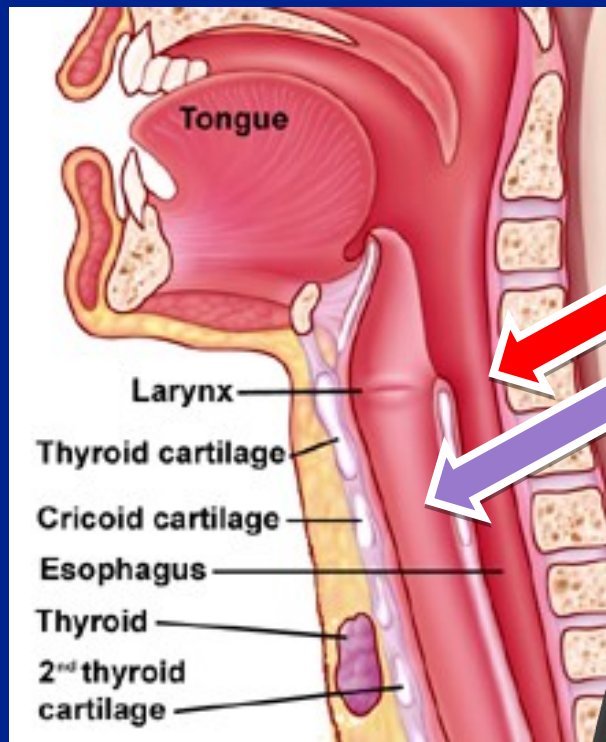
- Hypertonic nasal irrigation is a therapy that flushes the nasal cavity with saline solution, facilitating a wash of the structures within.
- Originally part of the Yogic tradition as Neti, this technique is anecdotally regarded as safe and effective.
- It has been suggested as adjunctive therapy for sinusitis related symptoms.
- Potential efficacy is supported by the observation that hypertonic saline improves mucociliary clearance, ciliary beat frequency thins mucus, and may decrease inflammation.

- David Shoseyov and colleagues have shown that hypertonic saline improves both clinical scores and plain Waters' projection radiology scores in children with chronic sinusitis.
- They have also commented that the treatment is tolerable, inexpensive, and effective.
- Dr. Marple, professor of otolaryngology at the University of Texas says that saline nasal irrigation is a highly effective, minimally invasive intervention for people suffering from nasal issues.
- He however adds, **"But it's just not as sexy to talk about. People want to hear about surgery or antibiotics."**

- **David Rabago and colleagues at the University of Wisconsin have shown that daily hypertonic saline nasal irrigation improves sinus-related quality of life, decreases symptoms, and decreases medication use in patients with frequent sinusitis.**
- **They also recommended that primary care physicians can feel comfortable recommending this therapy.**

Kunjaj Kriya

- One of the Shat Karmas
- Immense value for mucous (Kapha) disorders
- Done in the morning on an empty stomach.
- One or two litres of lukewarm saline drunk rapidly
- Abdomen churned with Nauli Kriya or Agnisara
- Induce vomiting with fingers
- Mechanism: Close functional relationship between upper GIT and airways with reflex action in nerves supplying both esophagus and bronchi.



Breath-body harmonizing practices

- **Tala and Ardhakati kriyas**
- **Nasarga Mukha Bhastrika**
 - with Jathis
 - in Meru Asana
 - in Ushtra Asana
- **Vyagraha Pranayama**
- **Pawan Mukta Kriya**
- **Bhujangini Mudra**

Surya Namaskar

- Ancient Yogic method of worshiping the sun through a sequence of 12 postures that streamline the functioning of all systems of the human body.
- Includes a breath sequence & chanting
- Helps improve all aspects of physical fitness including cardio-respiratory efficiency.
- When done with the Surya Namaskar Mantras it has the added benefits of ventilating the sinuses.
- Helps develop breath-body movement coordination - corrects psychosomatic disorders by reuniting the body and mind through the breath.



SURYA NAMASKARAM

THE YOGIC SUN SALUTATION

Postures done from Standing



**Ardha Kati
Chakrasana**



Meru Asana

Postures done from Sitting



**Ardha
Matsyendrasa
na**



Ushtra Asana



Chatus Pada Asana and Vyagrah Pranayama

Postures done from lying Down



Bala Asana



Bhujanga Asana



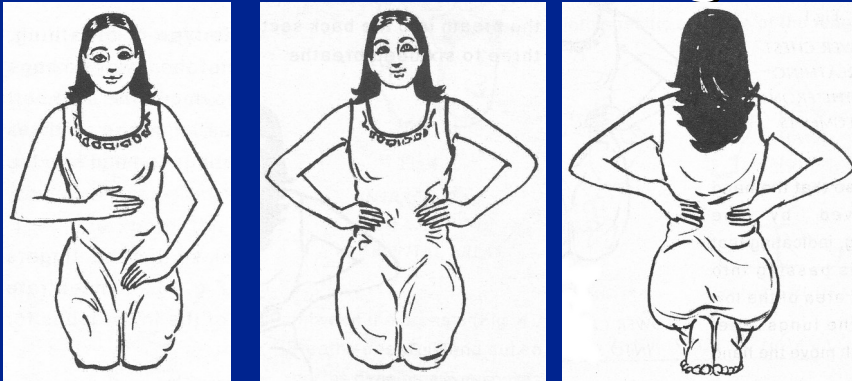
Matsya Asana



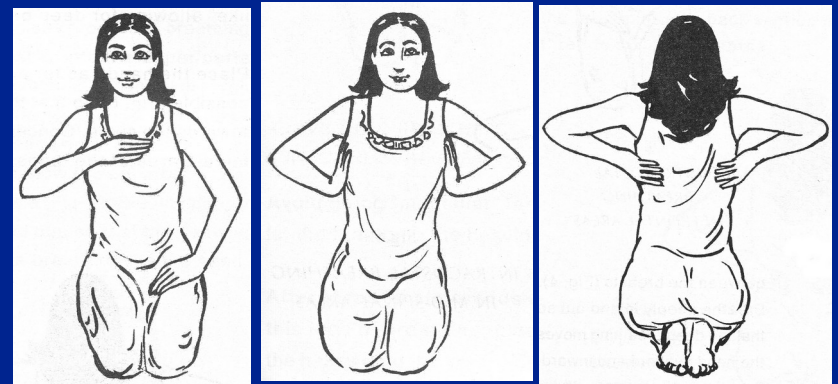
Pawan Mukta Asanas

Vibhaga Pranayama

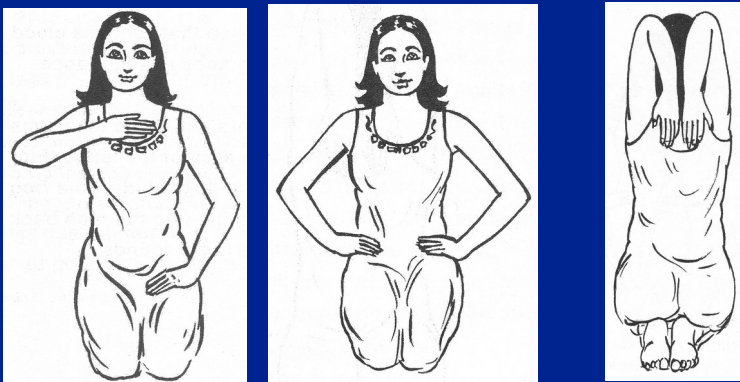
Adham Pranayama Low Chest Breathing



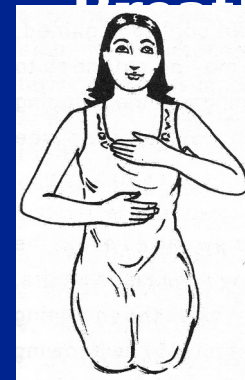
Madhyam Pranayama Mid Chest Breathing



Adhyam Pranayama Upper Chest Breathing



Mahat Yoga Pranayama Integrated Complete



Pranayamas

- **Bhastrika Pranayama**
 - Bellows breathing
- **Surya Bhedana**
 - Breathe in right and out left nostril
- **Pranava Pranayama**
 - Chanting Akara, Ukara, Makara and Omkara
- **Anu Nasika Pranayama**
 - Blasting out through the nostrils in a specific pattern
- **Kukkriya Pranayama**
 - Dog pant breathing
- **Shramari Pranayama**
 - The sound breathing



HATHENAS

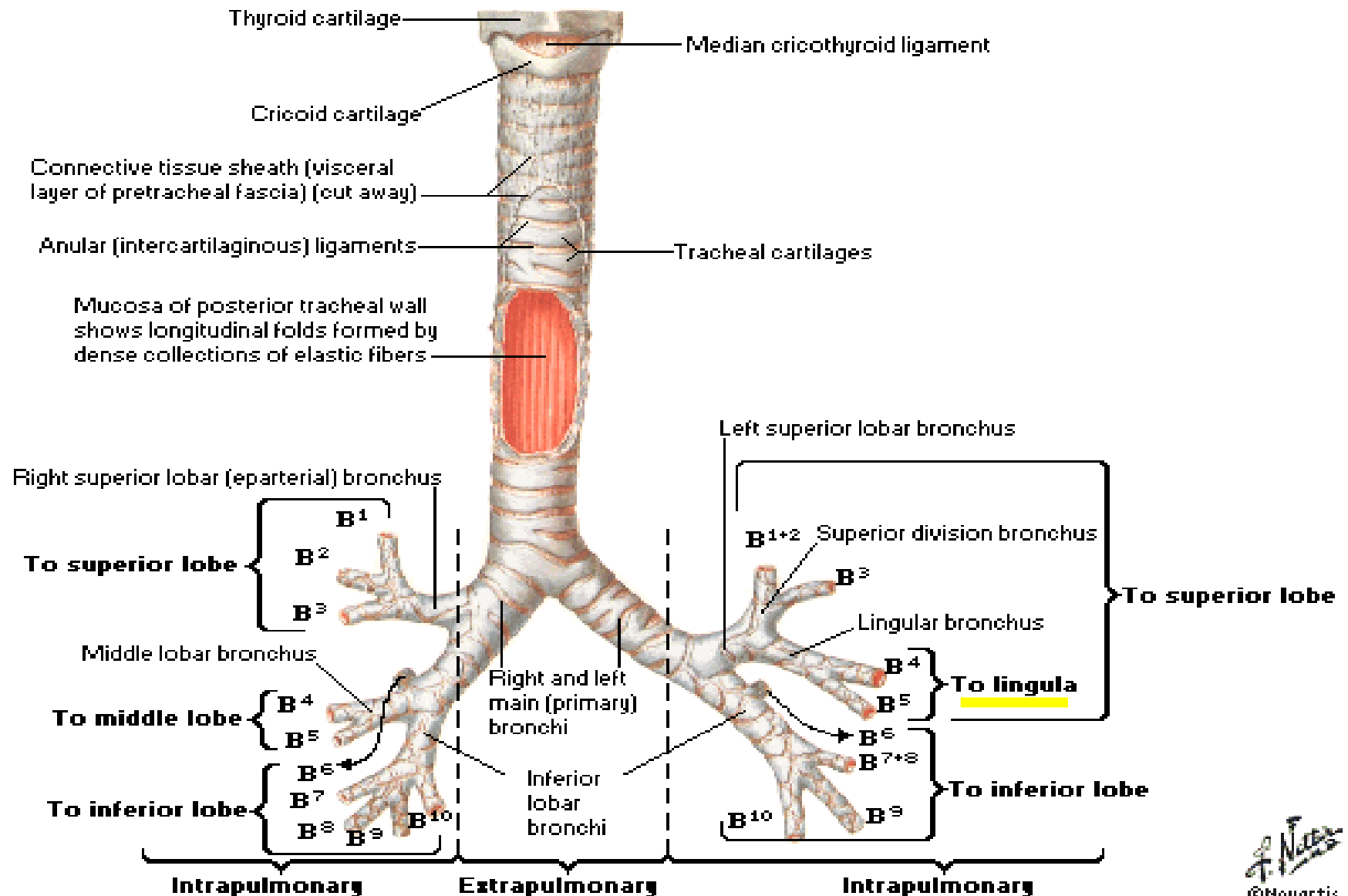
Asanas, Kriyas and Mudras
to mindfully utilize all parts of the lungs
by consciously forcing air
into all of the
bronco-pulmonary segments.

“Yatho mana, tatha prana”

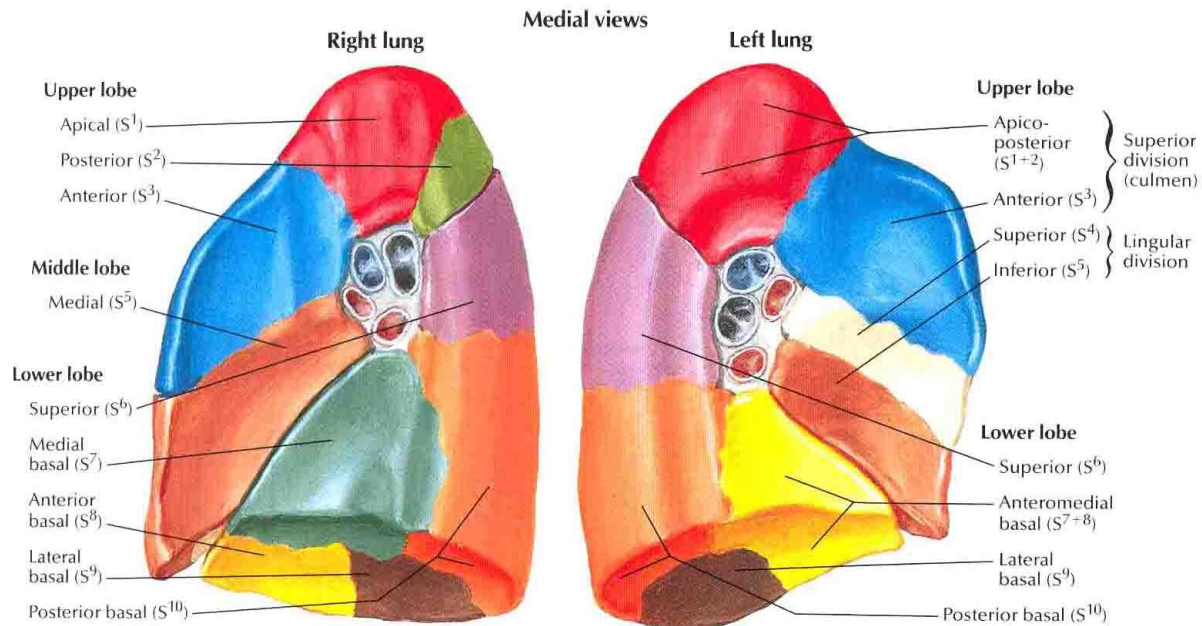
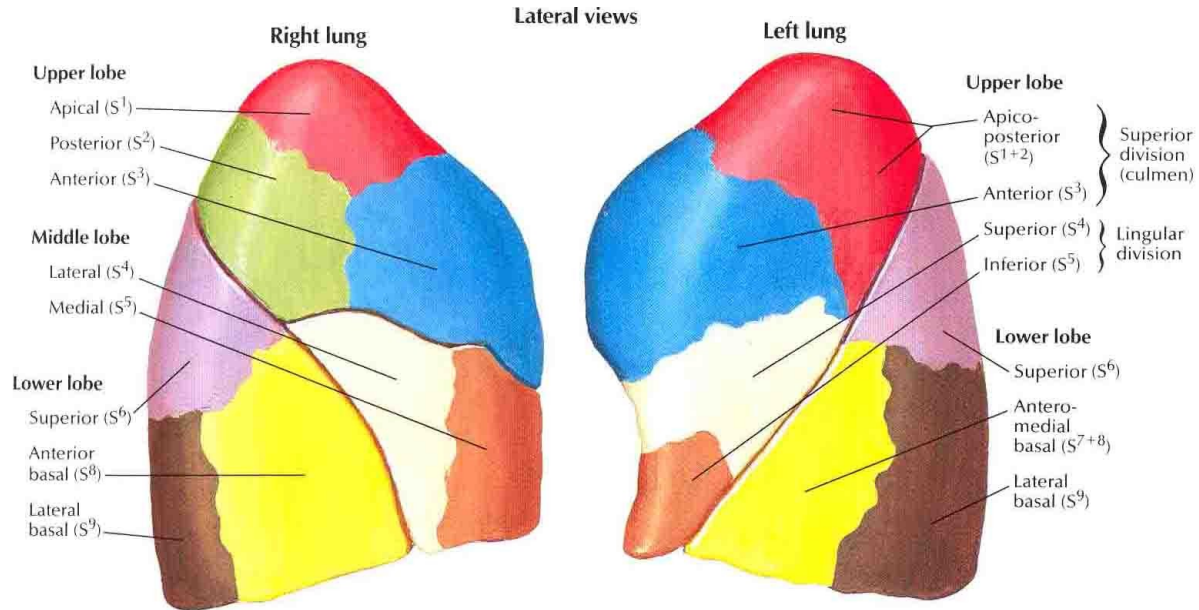
Where the mind goes, there the energy
flows!

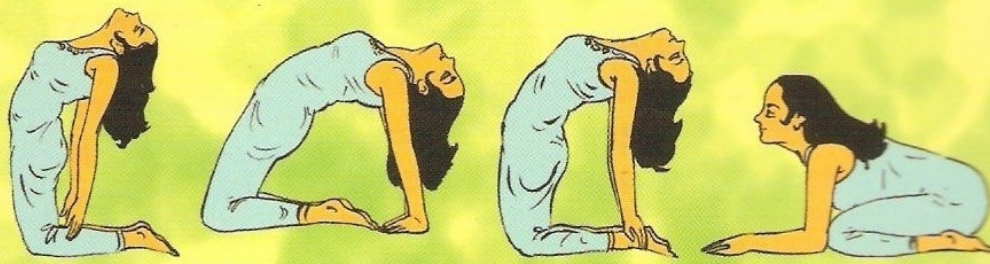
Trachea and Major Bronchi

Anterior View



Bronchopulmonary Segments

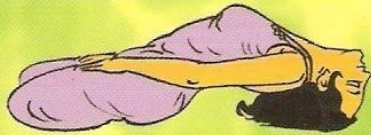




Adhama (low lung areas)



Madhyama (mid lung areas)

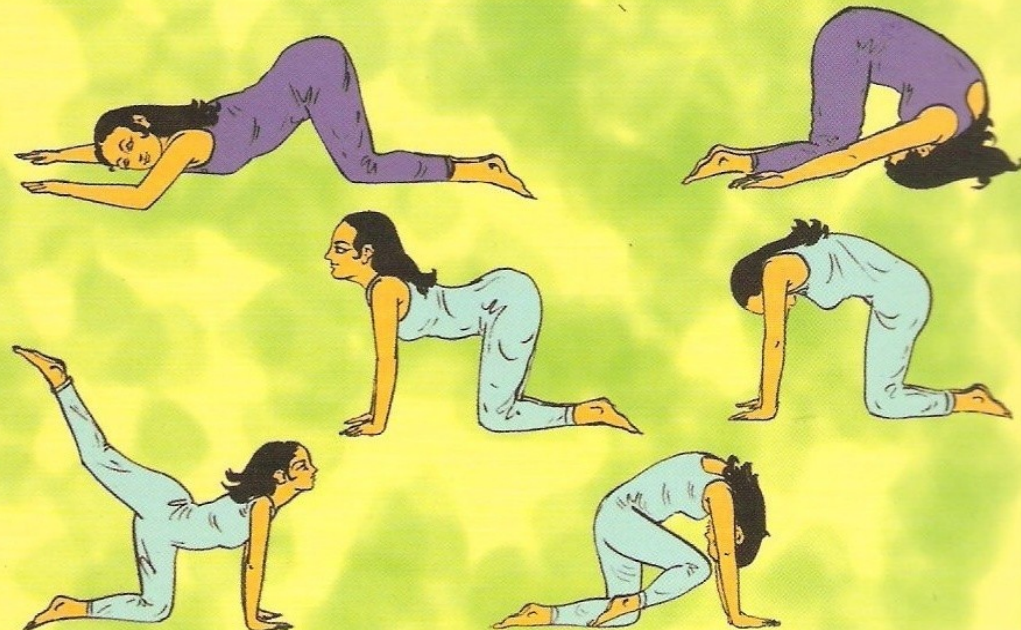


HATHENAS



Adhyama
(high lung areas)

Mahat Yoga
(unified lung areas)





Vajra Asana



Ushtra Asana 1



Ushtra Asana 2



Ushtra Asana 3



Shashaha Asana 1

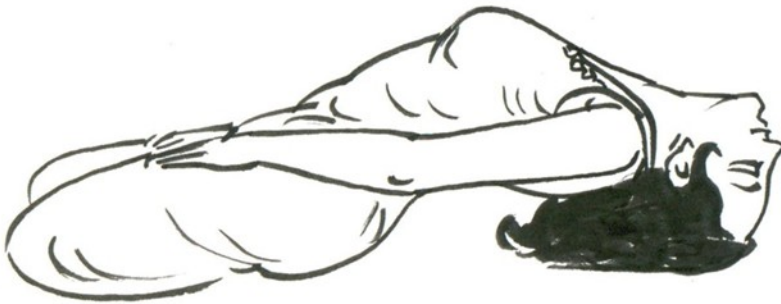
**HATHENAS FOR ADHAM
PRANAYAMA
Ushtra Asana 1-2-3
and
Shashaha Asana -1**



Matsya Asana 1



Matsya Asana 2



Matsya Asana 3



Shashaha Asana 2

**HATHENAS FOR MADHYAM
PRANAYAMA
Matsya Asana 1-2-3
and
Shashaha Asana -2**



Vajra Asana



Maha Mudra 1



Maha Mudra 2

**HATHENAS FOR ADHYAM
PRANAYAMA**
Maha Mudra 1 and 2
Shashaha Asana –3 and
Bala Asana or Nikunja Asana



Dharmika Asana



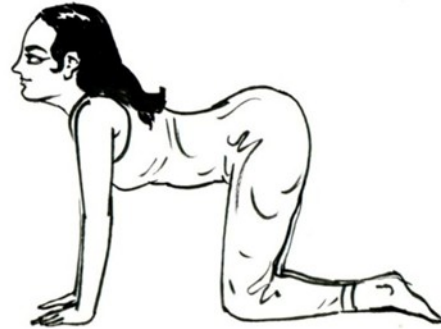
Shashaha Asana 3



Bala Asana



Chatus Pada Asana



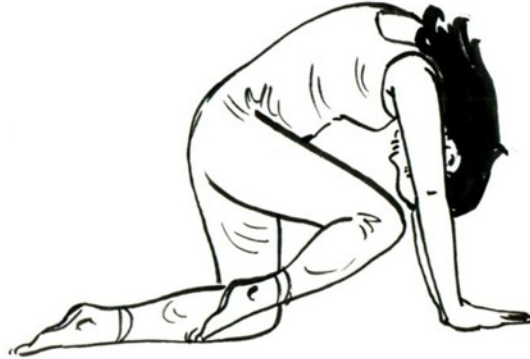
Vyagraha Pranayama



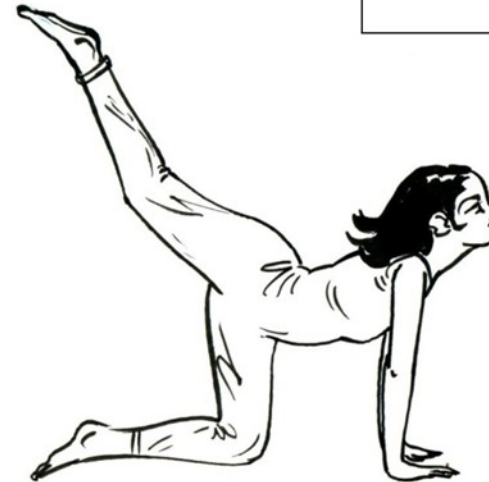
**HATHENAS FOR
MAHAT YOGA
PRANAYAMA
Vyagraha Pranayama
Sharabha Asana
and
Chiri Kriya**



Chatus Pada Asana

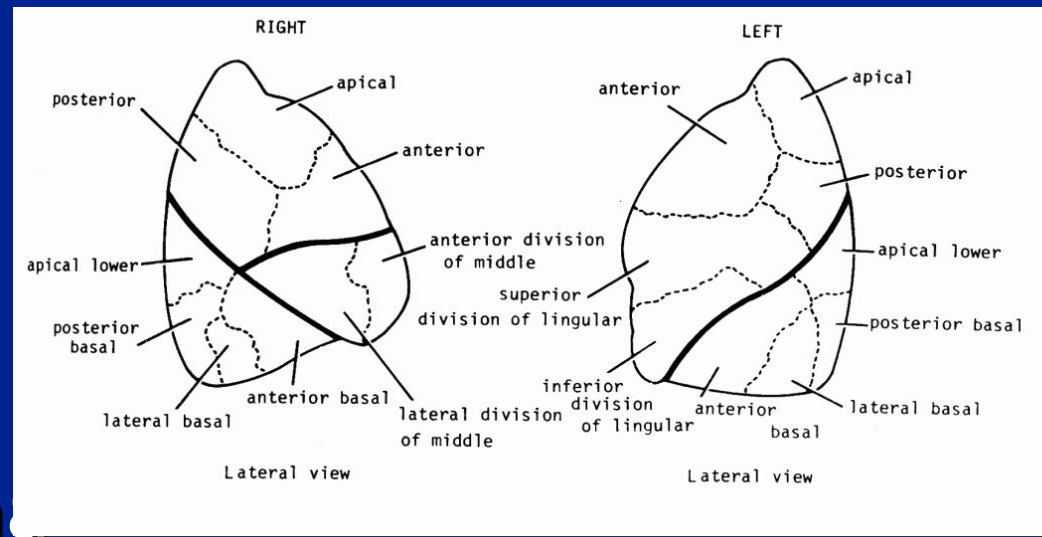


Chiri Kriya



Sharabha Asana

Vibhaga Pranayama



- Adham Pranayama
 - abdominal and lower limb disorders
- Madhyam Pranayama
 - chest and upper limb disorders
- Adhyam Pranayama
 - head and neck disorders
- Mahat Yoga Pranayama
 - affects the whole body

Focusing consciousness into broncho-pulmonary segments

Pranava Pranayama

- Using foundation of Vibhaga
- Chanting Akara, Ukara, Makara and Omkara Nada
- 2 to 3 times longer exhalations
- Appropriate hand gestures (Mudras)



Adham Pranayama

Breathing

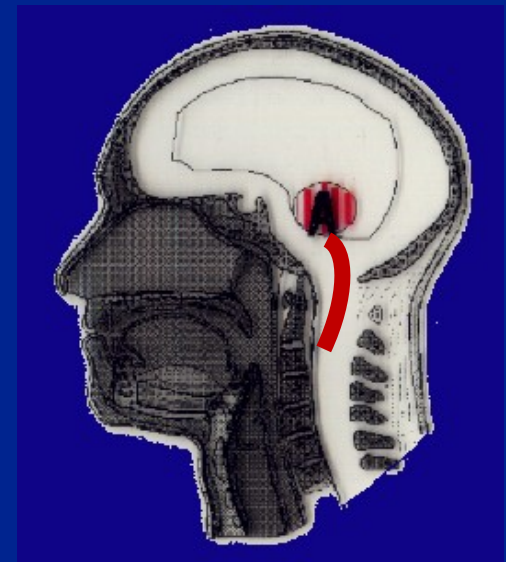
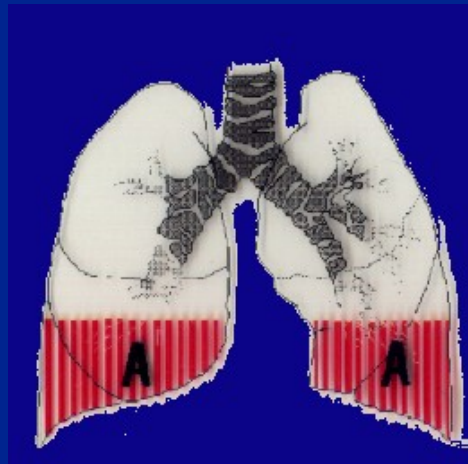
Part of Body

Part of Brain

“A” Lower Chest

Lower

Reptilian complex



Madhyam Pranayama

Breathing

Part of Body

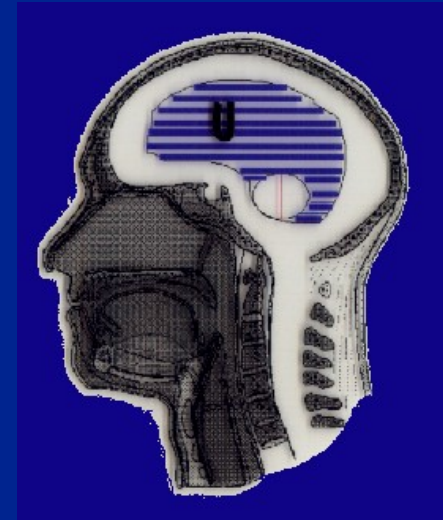
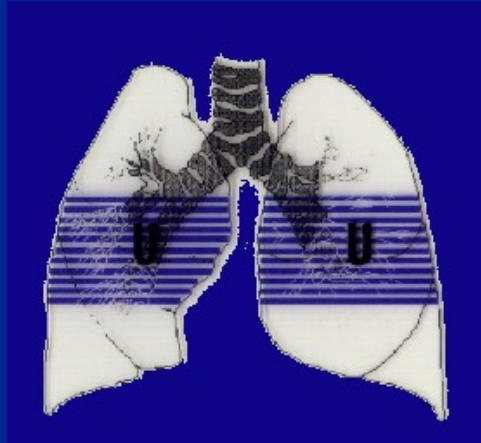
Part of Brain

“U”

Mid Chest

Mid

Mammalian complex



Adhyam Pranayama

Breathing

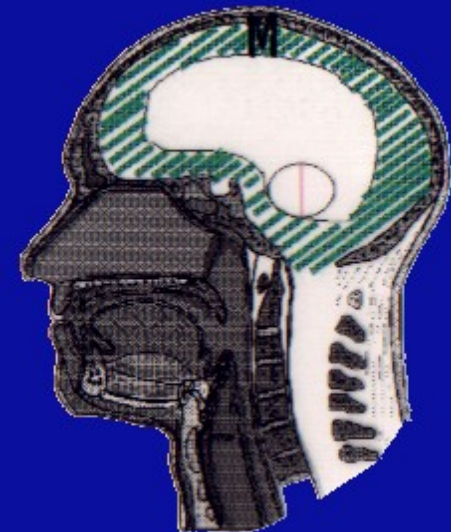
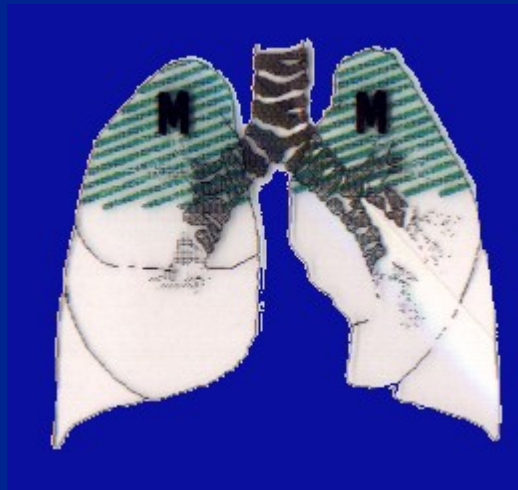
Part of Body

Part of Brain

“M” Upper Chest

Upper

Neo-cortex



Pranava AUM Pranayama

Breathing

Part of Body

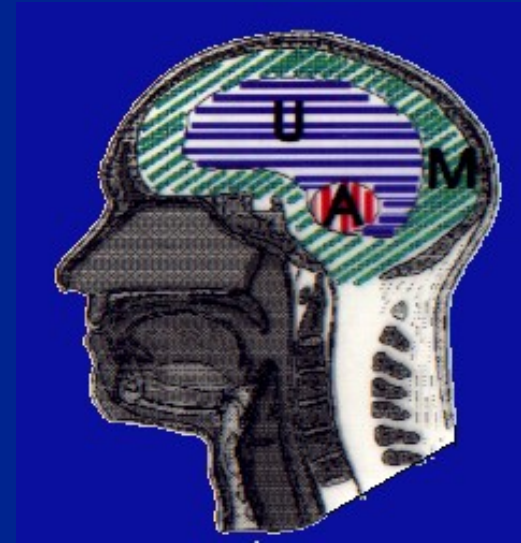
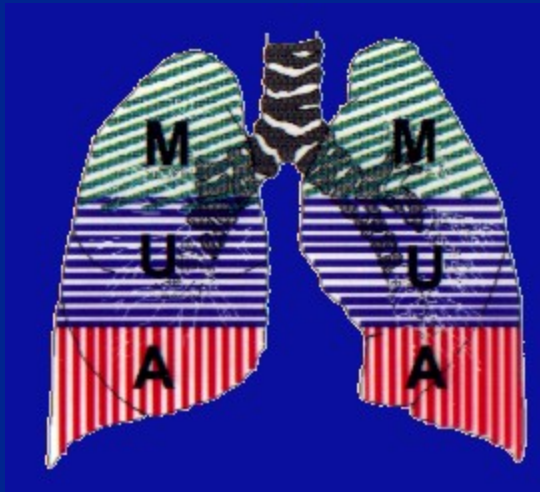
Part of Brain

“AUM”

Whole Chest

Whole Body

Whole Brain



Relaxation

Makara Asana



**Shvpanda Nishpanda
Kriya**

**Kay
a
Kri
ya**



Nada Yoga techniques

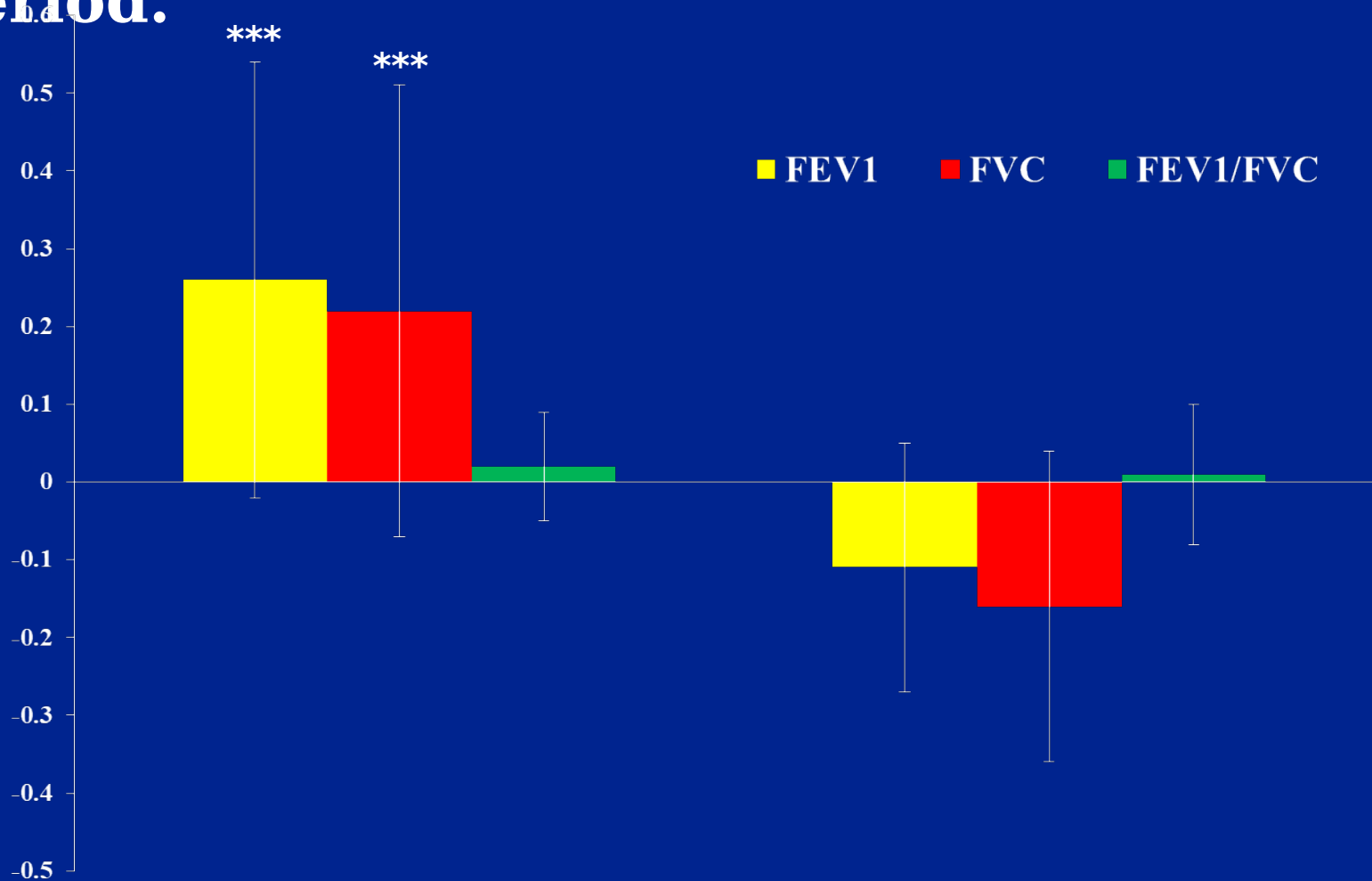
- **Nasarga mukha bhastrika**
- **Hakara kriya**
- **Kukkriya pranayama**
- **Simha nada**
- **Bhramari pranayama**
- **Brahma mudra**
- **Pranava pranayama and dhyana**

An Integrated Approach

- The need of the modern age is an integrated approach towards therapy utilizing Yoga in coordination & collaboration with other systems of medicine such as Allopathy, Ayurveda, Siddha and Naturopathy
- Physiotherapy, osteopathy and chiropractic practices may be used with the Yoga if needed
- Advise on diet and life style is very important
- Adoption of right attitudes through Yogic counseling

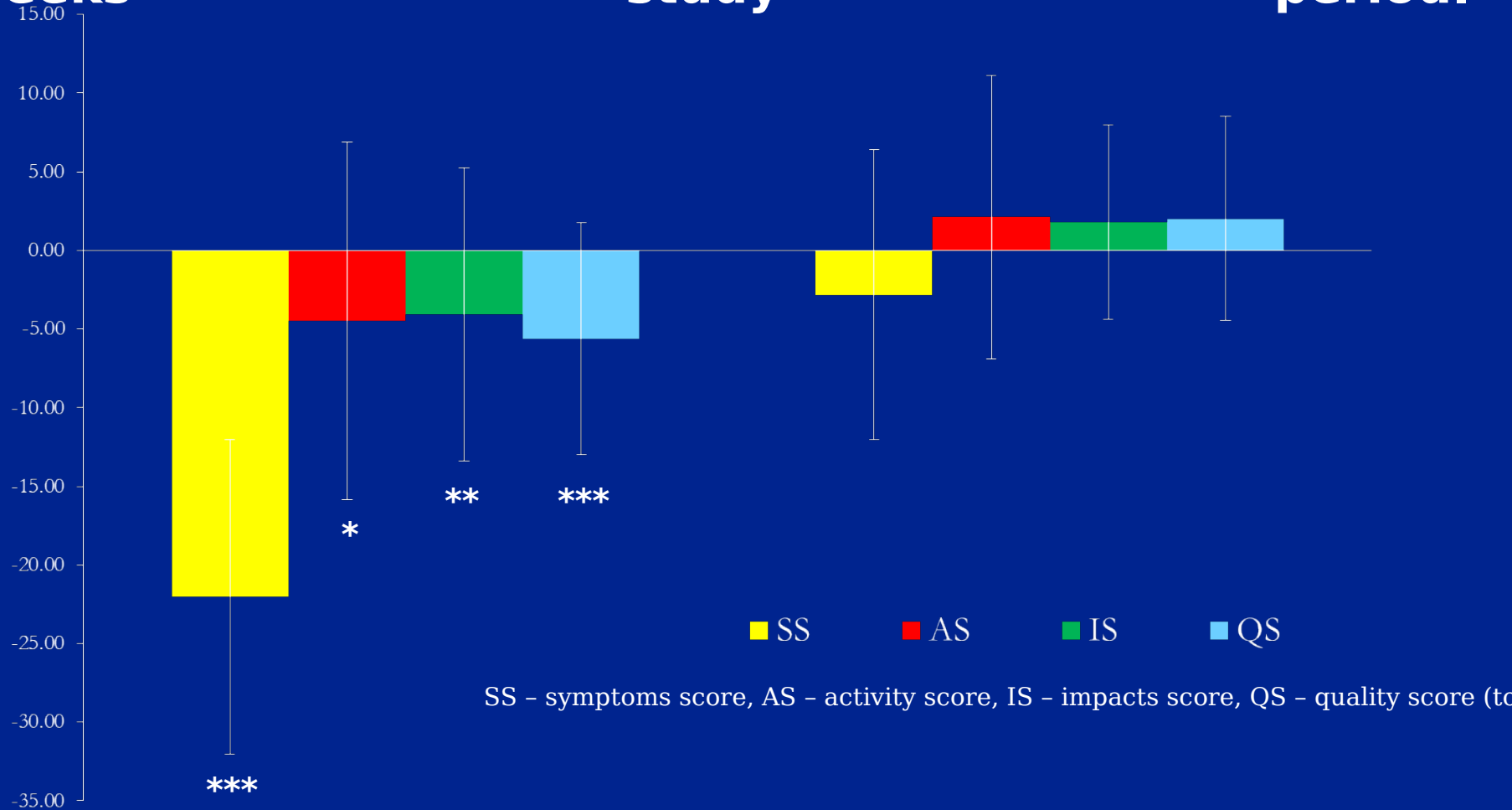
Recent research on Yoga and COPD from ISCM of SBV

Comparison of delta changes in lung function in adjuvant yoga therapy group and control (medication alone) group before and after the four weeks study period.



***p<0.001 by Student's unpaired 't' test for inter group comparison.

Comparison of delta in symptoms, activities, impact & total SGRQ scores in adjuvant yoga therapy and control (medication alone) groups before & after 4 weeks

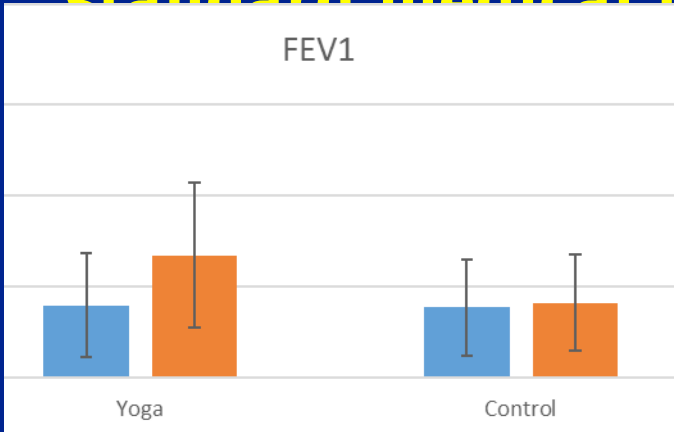


*p<0.05, **p<0.01 & ***p<0.001 by Student's unpaired 't' test for inter group comparison.

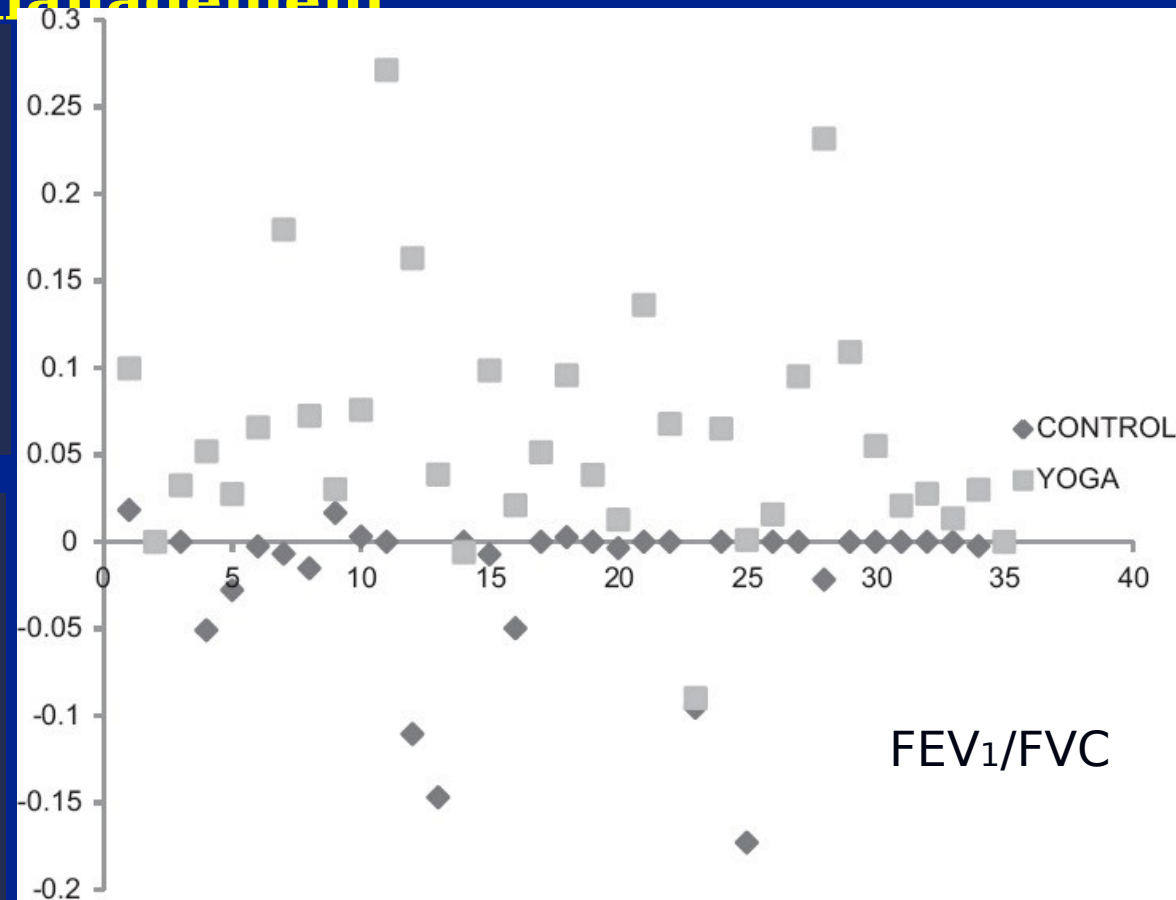
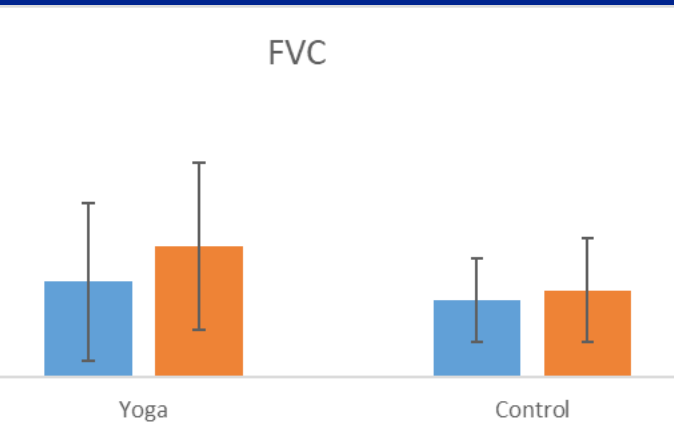
**Effectiveness of Adjuvant
Yoga Therapy in Diabetic
Lung :
A Randomized Control
Trial**

72 patients of diabetic lung as confirmed by spirometry (<70% of expected) randomized into control (n=36) who received only standard medical treatment & yoga group (n=36) who received training thrice weekly for 4 months along with standard medical management

FEV1



FVC



Concomitant improvements in glycemic, renal & anthropometric profiles.

- **Which patients tend to respond to integrative medicine interventions?** (Kligler et al, 2012).
- Responders demonstrated an attitude of "change as challenge;" a view of themselves as "independent" and "leaders;" an ability to accept one's illness while still maintaining a feeling of control over one's choices; a connection to the deeper context or meaning of complementary and alternative medicine (CAM) interventions, as opposed to just "previous experience" of CAM; and a sense of determination, commitment, and "willingness to fight" for what one needs from the health care system.
- Non-responders were more often uncertain and anxious in their relationship to their asthma, tending to fall back on denial, and lacking a connection to the deeper context or philosophy of CAM interventions.

In Conclusion..

- All of these mechanisms can help bring about both objective and subjective improvements in the condition of patients with respiratory disorders.
- Yoga as a therapy is also cost effective, relatively simple and carries minimal risk
- Should be advocated as an adjunct, complementary therapy in our search for an integrated system of medicine capable of producing health and well being for all.

- However all this optimism needs to be tempered with the negative findings from a recent systematic review and meta-analysis that reviewed 14 RCTs with 824 patients (Cramer et al, 2014).
- They concluded that there was no evidence for effects of Yoga compared with sham Yoga or breathing exercises and that no effect was robust against all potential sources of bias.
- They ended by saying, "Yoga cannot be considered a routine intervention for asthmatic patients at this point. It can be considered an ancillary intervention or an alternative to breathing exercises for asthma patients interested in complementary interventions."

Some final words.....

- The ancient art and science of Yoga has infinite possibilities of solutions for the health related issues faced by modern humankind.
- We however want it to be a miracle pill, that we take only once - immediate solution to all problems!
- Yoga is a w-holistic science and must be learnt and practiced with a holistic view.
- The dedicated practice of Yoga as a way of life is no doubt a panacea for psychosomatic, stress related disorders helping us to regain our birthright of natural health and universal happiness.
- The integration of Yoga and modern medicine can help create a healthier and happier world.

**Exercise
Regularly**

**Eat
Healthy**

**Healthy
Life**

**Reduce
Stress**

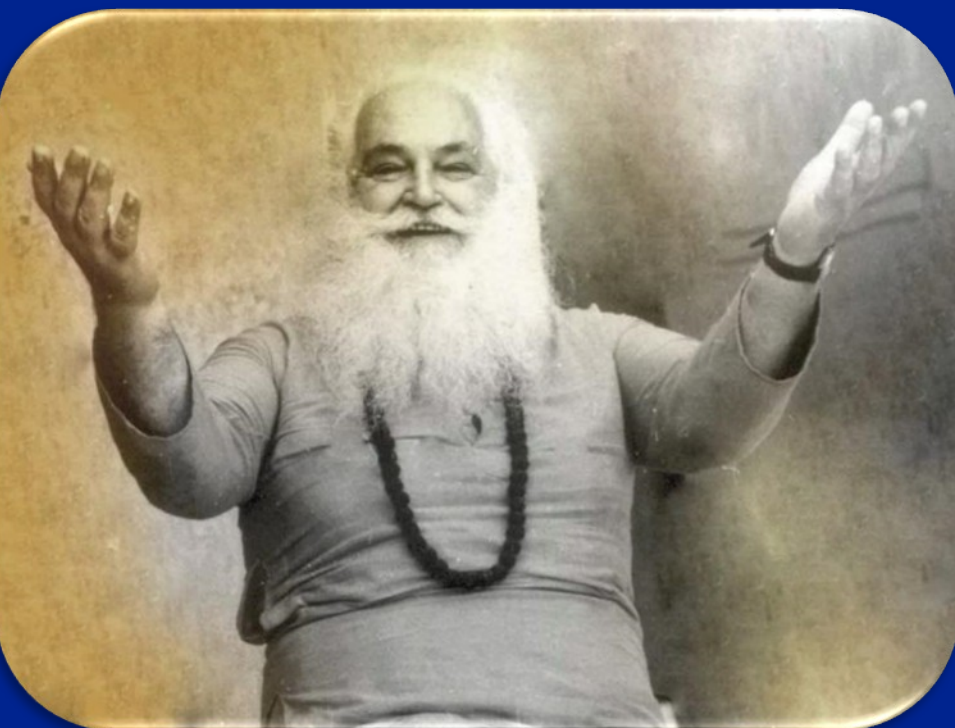
**Drink
Plenty of
Water**



A diamond is just a piece of charcoal
that handled stress exceptionally well.



“Health and happiness are your birthright. Do not forsake your golden culture for the plastic playthings of the modern world. Learn and live Yoga for then you will know true health and happiness”



Yogamaharishi
Dr Swami Gitananda
Giri Guru Maharaj
(1907-1993)

Founder
ICYER at Ananda Ashram,
Pondicherry

SRI BALAJI

ACCREDITED BY NAAC WITH 'A++' GRADE
LISTED U/S 12B OF THE UGC ACT, 1956



VIDYAPEETH

DEEMED TO BE UNIVERSITY
DECLARED U/S 3 OF THE UGC ACT, 1956



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